IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) ~~A front light~~ An electronic device, comprising:

a front light comprising: a light source; a light guide plate; and a plurality of prism-shaped lenses each being contact with a lower surface of the light guide plate, wherein a cross-section of each of the prism-shaped lenses, in a plane perpendicular to the side surfaces thereof, has a shape of equally-sided trapezoid; and

a reflective liquid crystal panel under the prism-shaped lenses;

wherein a plane defined by an upper base of the equally-sided trapezoidal cross-section of each of the prism-shaped lenses comes into contact with the lower surface of the light guide plate; and

an obtuse angle Φ of the equally-sided trapezoidal cross-section and a critical angle θ for the total reflection of the prism-shaped lenses satisfy the relationship of $90° < \Phi \leq 90° + \theta$.

2. (Original) A front light, comprising:

a light source;

a light guide plate; and

a plurality of prism-shaped lenses each being in contact with a lower surface of the light guide plate,

wherein a cross-section of each of the prism-shaped lenses, in a plane perpendicular to the side surfaces thereof, has a shape of an axially-symmetric figure that is enclosed with a pair of opposing parallel straight lines and a pair of opposing curved lines and is axially symmetric with

respect to a straight line connecting middle points of the respective opposing parallel straight lines;

each of the prism-shaped lenses is in contact with the light guide plate in a plane including a shorter one in the pair of opposing parallel straight lines; and

in the axially-symmetric figure, an angle defined between a normal at a certain point on one of the opposing curved lines and a straight line connecting a crossing point between the other opposing curved line and the shorter one in the pair of opposing parallel straight lines to the certain point, is in the range of ±3° from a critical angle for the total reflection of each of the prism-shaped lenses.

3. (Previously Presented) A front light according to claim 1, wherein a refractive index of each of the prism-shaped lenses is equal to that of the light guide plate.

4. (Previously Presented) A front light according to claim 1, wherein each of the prism-shaped lenses is made of the same material as the light guide plate.

5. (Original) A front light, comprising:

a light source;

a light guide plate; and

a plurality of rotational-body lenses each being in contact with a lower surface of the light guide plate,

wherein each of the rotational-body lenses has a shape of solid of revolution obtained by rotating an axially-symmetric figure, that is enclosed with a pair of opposing parallel straight lines and a pair of opposing curved lines and is axially symmetric with respect to a straight line

connecting middle points of the respective opposing parallel straight lines, around said straight line;

in the axially-symmetric figure, an angle defined between a normal at a certain point on one of the opposing curved lines and a straight line connecting a crossing point between the other opposing curved line and a shorter one in the pair of opposing parallel straight lines to the certain point, is in the range of ±3° from a critical angle for the total reflection of each of the rotational-body lenses; and

each of the rotational-body lenses is in contact with the light guide plate in a plane including the shorter one in the pair of opposing parallel straight lines.

6. (Original) A front light according to claim 5, wherein a refractive index of each of the prism-shaped lenses is equal to that of the light guide plate.

7. (Original) A front light according to claim 5, wherein each of the prism-shaped lenses is made of the same material as the light guide plate.

8. (Currently Amended) An electronic device, comprising:

a reflective liquid crystal panel; and

a front light for illuminating the reflective liquid crystal panel,

wherein the front light comprises: a light source; a light guide plate; and a plurality of prism-shaped lenses each being contact with a lower surface of the light guide plate, wherein a cross-section of each of the prism-shaped lenses, in a plane perpendicular to the side surfaces thereof, has a shape of equally-sided trapezoid;

a plane defined by an upper base of the equally-sided trapezoidal cross-section of each of the prism-shaped lenses comes into contact with the lower surface of the light guide plate; and

an obtuse angle Φ of the equally-sided trapezoidal cross-section and a critical angle θ for the total reflection of the light guide plate satisfy the relationship of $90° < \Phi \leq 90° + \theta$.

9. (Original) An electronic device, comprising:

an optical sensor; and

a front light for illuminating an object to be read by the optical sensor, wherein the front light comprises: a light source; a light guide plate; and a plurality of prism-shaped lenses each being in contact with a lower surface of the light guide plate,

wherein a cross-section of each of the prism-shaped lenses, in a plane perpendicular to the side surfaces thereof, has a shape of equally-sided trapezoid;

a plane defined by an upper base of the equally-sided trapezoidal cross-section of each of the prism-shaped lenses comes into contact with the lower surface of the light guide plate; and

an obtuse angle Φ of the equally-sided trapezoidal cross-section and a critical angle θ for the total reflection of the light guide plate the relationship of $90° < \Phi \leq 90° + \theta$.

10. (Original) An electronic device, comprising:

a liquid crystal panel; and

a front light for illuminating the liquid crystal panel from a display screen side thereof,

wherein the front light comprises: a light source; a light guide plate; and a plurality of prism-shaped lenses each being in contact with a lower surface of the light guide plate,

wherein a cross-section of each of the prism-shaped lenses, in a plane perpendicular to the

side surfaces thereof, has a shape of an axially-symmetric figure that is enclosed with a pair of opposing parallel straight lines and a pair of opposing curved lines and is axially symmetric with respect to a straight line connecting middle points of the respective opposing parallel straight lines;

each of the prism-shaped lenses is in contact with the light guide plate in a plane including a shorter one in the pair of opposing parallel straight lines; and

in the axially-symmetric figure, an angle defined between a normal at a certain point on one of the opposing curved lines and a straight line connecting a crossing point between the other opposing curved line and the shorter one in the pair of opposing parallel straight lines to the certain point, is in the range of ±3° from a critical angle for the total reflection of each of the prism-shaped lenses.

11. (Original) An electronic device, comprising:

an optical sensor; and

a front light for illuminating an object to be read by the optical sensor,

wherein the front light comprises: a light source; a light guide plate; and a plurality of prism-shaped lenses each being in contact with a lower surface of the light guide plate,

wherein a cross-section of each of the prism-shaped lenses, in a plane perpendicular to the side surfaces thereof, has a shape of an axially-symmetric figure that is enclosed with a pair of opposing parallel straight lines and a pair of opposing curved lines and is axially symmetric with respect to a straight line connecting middle points of the respective opposing parallel straight lines;

each of the prism-shaped lenses is in contact with the light guide plate in a plane including a shorter one in the pair of opposing parallel straight lines; and

in the axially-symmetric figure, an angle defined between a normal at a certain point on one

of the opposing curved lines and a straight line connecting a crossing point between the other opposing curved line and the shorter one in the pair of opposing parallel straight lines to the certain point, is in the range of ±3° from a critical angle for the total reflection of each of the prism-shaped lenses.

12. (Previously Presented) An electronic device according to claim 8, wherein a refractive index of each of the prism-shaped lenses is equal to that of the light guide plate.

13. (Previously Presented) An electronic device according to claim 8, wherein each of the prism-shaped lenses is made of the same material as the light guide plate.

14. (Original) An electronic device, comprising:

a liquid crystal panel; and a front light for illuminating the liquid crystal panel from a side of a display screen thereof,

wherein the front light comprises: a light source; a light guide plate; and a plurality of rotational-body lenses each being in contact with a lower surface of the light guide plate,

wherein each of the rotational-body lenses has a shape of solid of revolution obtained by rotating an axially-symmetric figure, that is enclosed with a pair of opposing parallel straight lines and a pair of opposing curved lines and is axially symmetric with respect to a straight line connecting middle points of the respective opposing parallel straight lines, around said straight line;

each of the rotational-body lenses is in contact with the light guide plate in a plane including a shorter one in the pair of opposing parallel straight lines; and

in the axially-symmetric figure, an angle defined between a normal at a certain point on one of the opposing curved lines and a straight line connecting a crossing point between the other opposing curved line and the shorter one in the pair of opposing parallel straight lines to the certain point, is in the range of ±3° from a critical angle for the total reflection of each of the rotational-body lenses.

15. (Original) An electronic device, comprising:

an optical sensor; and

a front light for illuminating an object to be read by the optical sensor,

wherein the front light comprises: a light source; a light guide plate; and a plurality of rotational-body lenses each being in contact with a lower surface of the light guide plate,

wherein each of the rotational-body lenses has a shape of solid of revolution obtained by rotating an axially-symmetric figure, that is enclosed with a pair of opposing parallel straight lines and a pair of opposing curved lines and is axially symmetric with respect to a straight line connecting middle points of the respective opposing parallel straight lines, around said straight line;

each of the rotational-body lenses is in contact with the light guide plate in a plane including a shorter one in the pair of opposing parallel straight lines; and

in the axially-symmetric figure, an angle defined between a normal at a certain point on one of the opposing curved lines and a straight line connecting a crossing point between the other opposing curved line and the shorter one in the pair of opposing parallel straight lines to the certain point, is in the range of ±3° from a critical angle for the total reflection of each of the rotational-body lenses.

16. (Previously Presented) An electronic device according to claim 14, wherein a refractive index of each of the rotational-body lenses is equal to that of the light guide plate.

17. (Previously Presented) An electronic device according to claim 14, wherein each of the rotational-body lenses is made of the same material as the light guide plate.

18. (Previously Presented) A front light according to claim 2, wherein a refractive index of each of the prism-shaped lenses is equal to that of the light guide plate.

19. (Previously Presented) A front light according to claim 2, wherein each of the prism-shaped lenses is made of the same material as the light guide plate.

20. (Previously Presented) An electronic device according to claim 9, wherein a refractive index of each of the prism-shaped lenses is equal to that of the light guide plate.

21. (Previously Presented) An electronic device according to claim 10, wherein a refractive index of each of the prism-shaped lenses is equal to that of the light guide plate.

22. (Previously Presented) An electronic device according to claim 11, wherein a refractive index of each of the prism-shaped lenses is equal to that of the light guide plate.

23. (Previously Presented) An electronic device according to claim 9, wherein each of the

prism-shaped lenses is made of the same material as the light guide plate.

24. (Previously Presented) An electronic device according to claim 10, wherein each of the prism-shaped lenses is made of the same material as the light guide plate.

25. (Previously Presented) An electronic device according to claim 11, wherein each of the prism-shaped lenses is made of the same material as the light guide plate.

26. (Previously Presented) An electronic device according to claim 15, wherein a refractive index of each of the rotational-body lenses is equal to that of the light guide plate.

27. (Previously Presented) An electronic device according to claim 15, wherein each of the rotational-body lenses is made of the same material as the light guide plate.